

# INVESTIGART

recherches in  
art education re  
recherches investigation art e  
ation research éducation artistique  
George Williams University art recha  
recherches investigation art education research  
éducation artistique Sir George Williams Unive  
sity art recherches investigation art education r  
research éducation artistique Sir George Williams Uni  
versity recherches investigation art education research  
éducation artistique Sir George Williams University art  
recherches investigation art education research éducation a  
rtistique Sir George Williams University art recherches inve  
stigation art education research éducation artistique Sir Ge  
orge Williams University art recherches investigation art éducat  
ion research éducation artistique Sir George Williams University  
art recherches investigation art education research éducation  
artistique Sir George Williams University art recherches inves  
tigation art education research éducation artistique Sir Georg  
Williams University art recherches investigation art éducat  
ion research éducation artistique Sir George Williams Univers  
ity art recherches investigation art education research éd  
ucation artistique Sir George Williams University art re  
cherches investigation art education research éducation  
tistique Sir George Williams University art recherch  
s investigation art education research éducation  
rtistique Sir George Williams University art r  
cherches investigation art education resea  
éducation artistique Sir George William  
s University art recherches inves  
tigation art education research  
éducation artisti



- 1** art math science  
math science art  
science art math

Andrée Beaulieu-Green

- 2** Rationale for Design Education at Elementary Level.

Lydia Ferrabee

- 3** Ce n'est pas l'Integration des forces armées.

Camille Leduc

- 4** Jouer un Programme aux Dés et Autres Jeux de Chance.

Ronald N. MacGregor

- 5** Cultural Animation and Arts Administration in Canada.

E. Paul Schafer

- 6** The Similarity of Hierarchically Organized Pairs of Pictures Reported by Field-dependent and Field-independent High School Seniors.

William Winn

gart l invest  
igart l investiga  
stigar l investigar  
estigart l investigart  
estigart l investigart  
estigart l investigart  
estigart l investigart  
stigar l investigar  
tigart l investiga  
cart l invest  
t. l in

## Editorial

Here is the first issue of INVESTIGART. It has been compiled by Graeme Chalmers, Michèle Drouin-Martineau and Lucie Duranceau of Sir George Williams University and has been supported by funds from the university's Graduate Programme in Art Education and the Art Education Laboratory. But in no way should the publication be interpreted as being an official publication of the university -- opinions expressed are in all cases the author's own.

This publication was begun by people who felt a real need for a "journal" of this type in art education. We have tried to gear it to the "middle-of-the-road" and to include papers of interest to the classroom teacher and the university professor. For example in this first issue the papers by Lydia Ferrabee, Ron MacGregor and Andrée Beaulieu-Green contain many implications for both groups, as well as for school commissioners and provincial education department personnel. Dr. Schafer's paper alerts us to the fact that arts education does not occur just in schools. Dr. Winn's research report will probably be of most interest to other researchers; art educators have long been interested in "art related behaviour" and his paper on visual information processing may generate important implications for art learning if pursued a little further by persons in our field. Camille Leduc's short paper describes a curriculum development project in Quebec and contains the sort of information about on-going programmes that should be shared.

Our format is designed to encourage you to use the material. Adapt it to your own filing system. Give some of the papers to colleagues.

We hope that there will be an INVESTIGART 2 next Fall -- but this will depend on our being able to survive financially. Approaches for support have been made to various agencies. In the interim we hope that you will help us with the costs incurred in producing this first issue by making out a cheque for \$1.00 to:

"The Art Education Laboratory"

and sending it to: Dr. Graeme Chalmers  
Department of Fine Arts  
Sir George Williams University  
Montreal 107, Quebec.



gart l invest.  
igart l investiga  
stigart l investigar  
estigart l investigart  
estigart l investigart  
estigart l investigart  
estigart l investigart  
stigart l investigar  
igart l investiga  
cart l investi  
t, l in

# Editorial

Nous vous présentons la première publication d'INVESTIGART. Graeme Chalmers, Michèle Drouin-Martineau et Lucie Duranceau de l'Université Sir George Williams en ont la compilation. Cette publication a reçu l'appui financier du Programme d'Enseignement Supérieur en pédagogie artistique et des Laboratoires en éducation artistique. Mais il ne s'agit en aucun cas d'une publication officielle de l'Université et les opinions qui y sont exprimées sont celles leurs auteurs respectifs.

Cette publication a été entreprise par des gens qui sentaient un besoin réel de ce genre de journal en éducation artistique. Nous avons essayé de l'orienter vers un "juste milieu" et d'y inclure les articles qui peuvent intéresser autant les praticiens que les chercheurs. Par exemple, dans ce premier numéro, les articles d'Andrée Beaulieu-Green, Lydia Ferrabee, et Ron MacGregor contiennent plusieurs implications pour les deux groupes, ainsi que pour les commissaires d'école et le personnel des ministères de l'Éducation. L'article du Dr. Schafer nous prévient du fait que l'éducation artistique existe ailleurs que dans les écoles. Le rapport de recherches du Dr. Winn saura sûrement intéresser d'autres chercheurs; les professeurs se sont longuement penchés sur les comportements reliés à l'art, et cet article sur les processus d'information visuelle peut entraîner des implications importantes dans l'apprentissage de l'art si des personnes engagées dans ce domaine en poursuivent l'application. L'article de Camille Leduc décrit brièvement l'élaboration d'un projet de programme au Québec et souligne les aspects de ce programme en cours qui gagnent à être connus.

Notre présentation vise à faciliter votre utilisation du matériel; vous pouvez l'adapter à votre propre système de classification et le partager avec vos collègues.

Nous espérons qu'il y aura un INVESTIGART 2 à l'automne prochain - c'est une question de survie financière. Nous avons sollicité de l'aide auprès de plusieurs organismes; entre-temps, nous espérons votre contribution qui nous permettra de défrayer le coût de cette première publication en nous écrivant un chèque au montant de \$1.00, au nom de:

adressé à  
"Art Education Laboratory"  
Dr. Graeme Chalmers  
Department of Fine Arts  
Sir George Williams University  
Montréal 107, Québec.

In art education we tend to concentrate on developing "techniques" more than on developing understanding of the "spirit" of the fine arts. The author suggests that we investigate, and concentrate upon the process of thinking in art, science, and mathematics.

Un des préjudices actuels des plus destructifs est celui qui oppose l'art et la science parce que différents et incompatibles. Nous sommes tombés dans l'habitude d'opposer le tempérament artistique au tempérament scientifique; nous les identifions même par l'approche créatrice et l'approche critique.

Dans une société comme la nôtre qui pratique la division du travail, il va de soi qu'il y a des fonctions différentes parce que c'est commode. Mais c'est par commodité et uniquement par commodité que la fonction scientifique est différente de la fonction artistique; de même la fonction de la pensée est différente de la fonction de la sensibilité et la complète. Mais la race humaine n'est pas divisée en penseurs et en sensibles, et elle ne pourra pas survivre longtemps à cette division arbitraire. (Bronowski, Jacob. The Common-Sense of Science. Pelican)

La division arbitraire des activités de l'homme par le symbole utilisé (plastique, sonore, verbal, scientifique) a aussi sectionné sa pensée en visuelle, sonore, verbale et scientifique. Le "spirituel" et le "matériel" sont devenus compétitifs. Le cerveau et le geste de l'homme sont devenus des machines à programmer, à apprivoiser pour un renement déterminé. L'école est devenue une base d'entraînement pour le futur adulte-outil. Le cerveau n'est plus pour apprendre à penser pourquoi et comment faire, mais plutôt pour apprendre à faire. L'élève apprend les trucs. Le maître récompense sa performance. C'est le grand cirque de l'école-industrie.

Nos écoles d'art n'ont pas échappé à ce mouvement. On y apprend à faire de l'art, on parle à propos d'art. Le professeur est limité à des cours spécifiques; l'étudiant avance sur la ligne de montage des pré-requis. On a divisé l'activité artistique en parcelles d'information sur la peinture, la sculpture, la gravure et le design. Le produit devient le but. On a confondu le métier et la tech-

nique pour la pensée. On ne forme plus des artistes, on forme des peintres, des sculpteurs, des graveurs et des designers; ou plutôt, on forme des techniciens pour ces métiers. On en est même arrivé à prendre pour de l'art la versatilité qui résulte d'un tel apprentissage. Versatilité limitée, limitée par un étalon de mesure "artistique" qui oublie les développements scientifiques et technologiques de notre société.

L'art ne peut pas vivre dans l'isolement de nos écoles d'art.

Replié sur lui-même, l'art est forcément réduit à ses techniques, à ses produits de forme pour la forme, de couleur pour la couleur en poursuivant l'esthétique du "beau à regarder". Seuls les initiés à ce "beau" peuvent le comprendre, continuant ainsi la mystification d'un art réservé à un public choisi, dit connaisseur.

Comme le dit encore Bronowski, "si les gens ne comprennent rien à l'art et à la science, ce n'est pas parce qu'ils sont sourds, c'est que l'artiste et le scientifique sont devenus muets. L'art et la science partagent le même silence."

Le jeune d'aujourd'hui ne veut plus faire partie de cette masse qui ne comprend rien, de cette masse-outil au service des autres. Il veut redécouvrir le gros bon sens de la science, de l'art. Il veut se sentir bien dans sa peau de connaissance. Il ne veut plus être greffé à une partie du monde, mais faire partie de ce monde. Il veut redécouvrir sa magie, son art.

Retrouvera-t-il sa magie en apprenant le fonctionnement des machines, en expliquant les phénomènes par l'accumulation des connaissances, en devenant une personne bien informée?

Retrouvera-t-il sa magie en apprenant toutes les techniques et les métiers artistiques pour jouer avec la plastique?

Retrouvera-t-il sa magie en retournant, comme plusieurs jeunes le font, à la simple accommodation homme-nature, oubliant les progrès scientifiques, artistiques et technologiques?

Je crois qu'entre ces deux extrêmes se trouve le point de départ d'une nouvelle vie qui liera le génie de l'homme à la nature, qui fera que ses inventions continueront la nature sans la détruire. L'homme ne sera plus l'outil manipulé, mais il redeviendra le manipulateur de sa vie, de son environnement, de son bonheur.

C'est ce point de départ qu'il faut trouver. C'est ce lien entre la connaissance et l'expression qu'il faut chercher. La connaissance seule n'est d'aucune utilité; et l'expression qui ne continue pas la

connaissance est sans valeur.

Pour nous, professeurs d'art, la connaissance et la pratique de l'art doivent être un moyen d'être. On n'enseigne pas ce que l'on sait mais ce que l'on est. D'autre part, si pour être il faut savoir, il faut donc que nous apprenions, à condition que ce savoir soit intégré à notre affectivité, à condition qu'il soit devenu notre propre vérité pour que nous sachions qui nous sommes. Seulement alors pourrons-nous, avec nos élèves, jongler avec les idées et les faits, jouer avec les hypothèses et continuer à améliorer l'homme dans tout son être.

Nos élèves, ils ne doivent pas apprendre pour apprendre, faire pour faire. Ils doivent pouvoir se voir être s'ils veulent communiquer aux autres ce qu'ils sont ou ce qu'ils veulent devenir. L'art n'est-il pas une démarche vers la connaissance et une prise de conscience sociale et politique? L'art vu ainsi ne peut plus être uniquement la pratique d'un métier qui conduit à la versatilité. Il doit englober toutes les connaissances d'une époque et les aspirations d'un peuple. Son enseignement doit englober toutes les connaissances d'une époque et les aspirations de chacun.

Au début, la science comme l'art était philosophie, était pensée. La science appliquée a développé la technologie. Aujourd'hui, l'artiste tente d'utiliser la technologie, mais en oublie l'esprit, le point de départ qui est la découverte scientifique, la science dans son fondamental. Et le fossé va s'élargissant entre l'artiste et le scientifique, tous deux vivant séparés à l'intérieur d'un même monde.

Je vois dans l'intégration de l'art à la science et à la mathématique un moyen de réconcilier l'artiste et le scientifique, un moyen de redonner aux jeunes un espoir dans ce monde machine, un moyen de remettre l'art dans les mains de tous parce qu'il sera partie de tout.

Je sais qu'il est toujours facile de lancer de grandes idées en théorisant. Plus difficile est l'application de la théorie. Dans un prochain article, je vous ferai part de mes essais en vue d'une éducation où l'art, la science et la mathématique se joignent dans des réalisations artistiques? mathématiques? scientifiques?

---

Andrée Beaulieu-Green: Professeur au Département de Pédagogie artistique à l'Université du Québec à Montréal.



investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investi investigart 1 investigart 1  
 investigart 1 invrt 1 investigart 1  
 investigart 1 ir 1 investigart 1  
 investigart 1 investigart 1  
 investigart 1 investigart 1  
 investigart 1 investigart 1  
 investi tigtart 1  
 invest igart 1  
 inver zart 1  
 inve art 1  
 invrt 1  
 inrt 1  
 inrt 1  
 ir t 1  
 ir t 1  
 ir t 1  
 ir c 1  
 ir t 1  
 ir t 1  
 inrt 1  
 invrt 1  
 inve art 1  
 invest igart 1  
 investi stigtart 1  
 investiga estigtart 1  
 investigart nvestigart 1  
 investigart 1 investigart 1  
 investigart 1 invrt 1 investigart 1  
 investigart 1 invrt 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1  
 PRINTEMPS 1973 SPRING 1973 investigart 1 SPRING 1973 PRINTEMPS 1973

## Rationale for Design Education at Elementary Level

Lydia Ferrabee

Dans cet article, l'auteur se base sur son expérience de designer et s'inspire d'études récentes en psychologie pour évaluer l'apport que peut apporter la démarche en design au niveau de l'élémentaire. Elle fait plus particulièrement la relation entre la démarche du design et le dévelop-

pement de l'enfant; car elle est d'avis que tout programme à l'élémentaire devrait d'abord être fondé sur le principe d'une contribution au développement de l'équilibre intellectuel, émotif et physique, plutôt que sur la quantité de connaissances qu'il peut fournir. Enfin, elle suggère d'après son interprétation du processus du design que celui-ci s'avère une activité fort valable en éducation au niveau élémentaire.

In this paper I endeavour to use my experience as a designer and recent studies in psychology to explain the value of including the design process in elementary education. It is my belief that all programmes at the elementary level should be considered first on the basis of how they contribute to the balanced intellectual, emotional and physical development of the child, rather than to the amount of knowledge they provide, and I suggest that the design process outlined here is one activity that is relevant in these terms to elementary education.

#### The Design Process:

To the professional, designing is a team process in which aesthetic, human and functional values are combined with a knowledge of technology and science to modify and affect almost any aspect of the environment. In terms of the school curriculum the process can be thought of as an "applied art", a way of relating science methods to art methods and skills to solve problems.

At whatever level the process is undertaken, it involves an external activity of exploration, experimentation, research and analysis followed by an internal stage in which the material is absorbed, understood, personalized, and in which connections are made amongst experiences. Finally there is the expressive stage in which projects are formulated and undertaken.

#### Child Development:

As a basic framework within which to relate child development and the design process, I have chosen one suggested by psychologist Richard Jones in his Fantasy and Feeling in Education (1968). In this book he discusses the possibility of a complete theory of instruction. He states: "The objective of instruction is to develop imagination plus community plus mastery, which produces creative learning," and the ability to solve problems effectively. This is perhaps more easily understood by considering the polar opposite which he defines as "imagination plus aloneness plus helplessness which produces anxiety which may have to be released by psychotherapy."

#### Mastery:

Studies by Jean Piaget and other psychologists suggest



that children develop concepts from physical experiences. (McKeachie Doyle 1970, pp.362-367)

The creative process in which artists and designers (and scientists) are involved is still closely related to exploration of and mastery over tools and materials. Their approach seems very close to the natural learning patterns of a child. However, it is not enough to be taught a skill in a limited context for a specific goal. The relationships and properties of these tools and materials must be understood and felt so well that they can be used to attain a wide variety of goals and solve a wide variety of problems. Much of this has to be self-taught. An artist or designer will "play" with tools and materials until he understands their inherent properties. A young child learns in much the same way.

Psychologists have observed that children learn to feed themselves most effectively when they are sufficiently hungry to try and put the food in their mouth, but not so highly aroused that they become easily frustrated by their inability to satisfy their hunger drive fast enough. If their attention is focused too strongly on the goal of satisfying their hunger, they are unable to concentrate on and explore the task of learning to feed themselves. (McKeachie Doyle 1970, p.474)

In their book Understanding Children's Play (1952) authors Hartley, Frank and Goldenson have documented the stages which a child follows when he is free to explore clay, or any other medium, in his own way. First the child will handle, feel and perhaps even smell and taste the clay. He will then try to make impressions on it. At this stage that alone is what gives pleasure and satisfaction to the child - pounding or poking the clay, or turning a brace and bit and watching it cut into wood. At the third stage, something that happens during the earlier exploration will suggest an object to the child and will be used as such in his play - a shape becomes a car for example. It is only at the fourth stage that the child will start to conceptualize an object in his mind and then make it with the tools, materials and processes he now thoroughly understands. Through this process the child learns to set goals which he has developed the competency to attain.

Unfortunately many teachers direct the child to start at the fourth stage by such comments as "What are you making", or by the suggestion that he make something specific. In this way he loses the opportunity to develop his own ability to explore, understand and manipulate the materials. By starting at the fourth stage, the teacher is also providing

the child with a goal before he has had time to develop his own, and acquired the skills to achieve it. This leaves him vulnerable to frustration, in reaction to which he may well give up, lose interest or develop patterns for pleasing the teacher at the expense of his own personal involvement.

This approach is still largely misunderstood. Recently a teacher with a masters degree in art education took children to see some eskimo stone sculpture. She then gave them soap and tools and asked them to make a soap sculpture. By suggesting a sculpture she provided the children with a goal they were unlikely to be able to reach to their satisfaction, particularly as they had been shown the work of skilled eskimo artists working in soap stone which provided them with a false connection suggesting a relationship between soap stone and soap. I believe the children should have been given soap, tools and water and allowed to explore the relationships, experiencing the pleasure and excitement of discovery and self-learning. Most of the fun of carving in soap is watching it change shape and disintegrate in water.

This early manipulation of materials and tools provides children with their first experience of discovery and of mastery the value of which is indicated in the following passage:

The short range experience of discovery, and the long-range experience of competence figure prominently in the process of accommodation, mastery and attainment of concepts.

The short term experience of revelation and the long-range experience of self-confidence figure prominently in the process of assimilation, invention and the formation of concepts. (Jones, 1968)

#### The Development of a Sense of Community:

A child develops his ability to work with and enjoy other people through his experience in group situations. The patterns of communication and instruction which are provided in schools will influence the child's development of this ability.

Research into learning in very early childhood suggests that for maximum learning a child requires a stimulating environment; counted by a sense of security provided by

the warmth and support of a parent figure (otherwise a stimulating environment may simply become a frightening one). In studying mothers working with their children in accomplishing a simple task researchers also found children learned more quickly when mothers drew the child's attention to aspects of the situation which were important to the task.

In working with older children the following study is relevant to both the question of leadership in teaching and the development of the child's sense of himself and his ability to relate effectively to others. Lewin, Lippit and White (See McKeachie Doyle, 1970, pp.573-576) studied four boys' clubs. Each of these clubs had an "authoritarian" leader, a "democratic" leader, and a "laissez-faire" leader for periods of six weeks each. The authoritarian leader took responsibility for assigning tasks, giving praise and criticism, and demonstrating methods of work. The democratic leader guided his group to decide on its own activities. He participated with the group and left members free to work with whom-ever they pleased. The laissez-faire leader played a completely passive role, leaving individuals or groups to decide activities and procedures. He supplied information, helped when he was asked to and was friendly, but otherwise played no active part in the group.

Each person served as an authoritarian leader during the first six weeks, as a laissez-faire leader for the second six weeks, and as a democratic leader for the third period of six weeks. Since each leader took on each of the possible leadership roles with different groups, the results could not be attributed to the personality characteristics of the leader.

The differences between the groups in the different conditions were remarkable. Under an authoritarian leader groups showed one of two responses, either they were submissive, or they reacted aggressively against direction. Under laissez-faire leadership, the group lost interest. Under democratic leadership the same groups showed enthusiasm for the work as well as increased good will toward one another.

The purpose of each group was both social and productive. From the point of view of time spent on productive activity, there were noticeable differences between the groups. When the leader was present, the authoritarian groups spent the largest percentage of their time on production (74% in the submissively reacting groups and 52% in the aggressively reacting groups); the democratically lead groups spent 50% of their time on productive work and the laissez-faire groups were productive only 33% of the time. When the group leader was out of the room, however, productive time in the two authoritarian groups dropped sharply (from 74% to 29% and from 52% to 16%), while the productive time of the demo-



cratically led groups dropped only slightly (from 50% to 46%). The leaders further reported that both production and play were more creative in the democratic groups than in the authoritarian groups, and that the creativity in the democratic group was more sustained and more practical than in the laissez-faire group.

Other studies have been made by Levitt comparing channels of communication in three types of instruction - a lecture, a teacher-centred question and answer period and a group discussion with a teacher. He found that the greater the freedom for discussion the more the group liked the task and the more satisfied they were with it. Other studies have shown that members of a class also develop a greater liking for it, and understanding of, each other if they are allowed to converse among themselves. (McKeachie Doyle 1970, p.565)

Playing with clay, building constructions, painting murals, all these making and doing activities which are so much a part of the design process have been found to encourage individual verbalization and communication within a class structure. (Hartley et.al. 1952)

#### Imagination:

The ability to imagine and the quality of the imagining is related to the thinking process. Psychologists have identified two types of thinking, divergent and convergent.

Divergent thinking is a personal, associative, nonlogical type of thinking which generally takes place in a relaxed even playful atmosphere. It can be a dream-like state of reverie which Richard Jones (1968) describes as pre-conscious, as distinct from unconscious or conscious activity. It is an imaginative free-wheeling process in which many solutions are suggested for a problem. The ability to think in this way can be strengthened through involvement in the kind of democratic group learning structures mentioned earlier in which students develop their own methods for finding answers, and for forming and deciding upon a course of action. This process necessarily involves group discussions and the development of alternative possibilities.

Convergent thinking is a logical and analytic process in which a single "correct" solution is sought. Richard Jones describes this as a process of being deliberately unimaginative in order to concentrate on the precise communication of an idea. He mentions that the problem is that this

unimaginative method is often used for no good purpose because the idea being communicated hasn't developed from a personal, imaginative thinking process.

Most school activities are intended to develop convergent thinking and most methods of testing intelligence are devised to measure a child's performance in this area. The "correct" answer to a problem is not usually question for discussion, it is the one the teacher knows. There is generally very little opportunity provided in schools for a child to develop his ability to use preconscious, divergent thinking patterns.

#### Creative Problem Solving:

As we are discussing the child's ability to identify and solve his own "problems" it is interesting to consider the attempts that have been made to analyse this process as it occurs in scientists, writers and artists.

The classic description of problem solving identifies four main stages. They are not tight divisions, nor does the process in each individual case fit the pattern exactly, but the stages do represent the basic structure of the creative process. The first stage is preparation; which in terms of elementary school involves exploration, personal discovery and experience, from which the child develops a concept of a particular task. He then undertakes more specific exploration and research in an effort to solve this task. Next is the incubation stage. The task is set aside and conscious concentration on it is replaced by other activities. At some time there is then a moment of illumination when a solution comes into the mind. Finally there is the verification stage when the solution at least for the next step is checked out. This often develops into the preparation stage of the next phase of the task. (McKeachie Doyle 1970 Chapter 10)

To quote McKeachie-Doyle: "problem solving has many paradoxical elements: logic and fantasy, directedness and free association, task involvement and turning away from the problem, serious work and play. It is the appropriate combination of these elements which result in creative solutions."

This process requires a time cycle which is generally quite foreign to most classrooms as they adhere to a rigid structure which divides known information into units for children to study in predetermined, fixed periods of time.

The use of problem solving as a basic approach to learning

is certainly not exclusive to design education, the sciences for example also use this method, but in the design process the emphasis is on finding a personal, aesthetic and imaginative solution, one that embodies the emotions and attitudes of the student. It also involves developing the special co-ordination skills between the hands, eyes and brain which enable him to express himself and his concepts fully in visual, three dimensional and other nonverbal forms.

#### Specific Programmes:

Here are brief descriptions of three programmes which reinforce and develop aspects of design activity at the elementary school level, although they were not specifically intended for that purpose.

In London, Ontario simple workbenches were introduced into elementary school classrooms by Goldie Simpson. He is an experienced teacher who has been a vice-principal and is now an industrial arts specialist.

The Ontario Department of Education has for several years offered a set of tools in a work-chest arrangement for the elementary school classroom which costs about \$200. However Mr. Simpson found that these sets were seldom used. He felt that it was because most of the elementary teachers, particularly in the younger grades, didn't feel competent to introduce this rather forbidding set of tools to the children. So he took a different approach. He assembled a simple set of tools excluding the few, such as knives and chisels, with which the children might seriously hurt themselves. This set of tools cost about about \$35.

Mr. Simpson considers the bench as a resource area to be used by a few children at a time, so he does not duplicate most tools. This also encourages the children to share, to help each other and thus increase their sense of community.

Mr. Simpson does not have a standard workbench, rather he works with the teacher, the class and the materials that are available, to build with them their own workbench - one suited to their classroom and their way of doing things. This undertaking involves the children in a basic creative problem-solving, design process right from the beginning.

He works with teachers who understand the value of the workbench. He shows them how it should be introduced and used, how to use the tools, and where to get scrap materials. In introducing the tools Mr. Simpson makes it clear to the teacher that the children need only a small amount of instruction in how to use the tools, and plenty of time to work with them,



and to teach each other. In learning in this way children develop projects for themselves which are usually within their level of competency. This does not mean of course that the teacher should not help by offering encouragement and making discreet suggestions based on her observation of the direction the child is taking, and the level of his mastery.

The value of this type of programme is now being more generally recognized. It has been supported for example by language arts specialists, as it stimulates both verbal and written expression, and by maths specialists as a tool in helping children understand maths concepts. In Manitoba workbenches are being introduced at the suggestion of the Curriculum Consultant for Language Arts, and in the Elementary Education Department of The University of Alberta a half-course is offered which introduces student teachers to the use of tools and materials.

Another relevant programme is undertaken by Mrs. Liston with her Grade 4 students in Smythe Street School, Fredericton, New Brunswick. These students work on two or three large projects each year, usually based on the Social Studies Unit. No two projects are ever the same because each new class plans its own. The project work is undertaken during those periods to which it can be related, but the work is not adapted to specific periods, it is allowed to flow as a continuous process. If enthusiasm and interest are running high, more periods are found, if interest lags, the project is put away until a renewed sense of direction develops. This relates to the time cycle mentioned earlier which psychologists have identified as being most helpful in creative problem solving.

One of Mrs. Liston's main objectives is to increase the creativity and motivation of the child within the learning process. She believes that "to be creative a child must be provided with the time and the opportunity to become involved very seriously in a task, without fear of making mistakes, of being criticised or of being restricted. He must have his chance to experiment, to try, to cast aside, to change, to trade, and reach for other materials. By doing everything himself he grows more observant, more alert and more appreciative to everything and everybody in his world around him. The outcome is a sensitive piece of self-expression and a dynamic learning experience."

When asked how she can fit in "the real lessons" when her students are involved in such time consuming projects, she explains that most of the necessary skills can be taught within the project itself through research, verbal and

written presentations, discussions and debates, measurement, analysis and constructional activities.

When asked what the teacher does she usually defines first what she does not do. "She does not impose her own ideas, her own way of doing or her own answers on the children. She suggests, she reads to them, she takes them on field trips, she tells them where to look for themselves, where to read, what person to see, where to write to find out, where to go. She provides time, provides some of the materials and suggests others. They visualize and go ahead and the teacher learns with the children."

The most unusual fact about Mrs. Liston's approach is that she believes it, understands it, practices it and makes it work. She has been doing so for over 25 years. First with a class in a one-room rural school huddled around a cast iron stove, and then through many stages to her present position in a low income urban district. In her classes she finds no problem children, no non-participants.

For the last unit of the year Mrs. Liston's class studies their province, New Brunswick. These projects are particularly relevant to the design process as I understand it, because they are closely related to the child's immediate experience and environment. The projects take about 3 months. One year each child wrote at least three letters to industries. Over 100 letters were sent out. Response was good. The companies sent information and samples of their products to the children, and members of their staff visited the school to answer questions and to provide more detailed explanations. Each child was able to set up his own display using the material he had received, and combining it with information he had acquired through considerable personal research. The finished exhibit was opened with a tape-cutting ceremony, attended by parents, interested members of the community, the industries involved and the President of the Board of Trade. Some of these displays were later used by the Board of Trade in an exhibit on New Brunswick.

Another year the children studied some of the buildings of New Brunswick. They visited them, found out all they could about the buildings and what went on inside them. Then the children, either in groups or on their own, chose a building to make and study further. These were finally assembled in a street and displayed. Long after the project was finished the children continued to notice the design of all the buildings they encounter in their daily lives - on the street, in books, on television. They notice the age, construction and the architecture of the building, and the relationship between the structure and the activity it

encloses. Mrs Liston has found that learning through projects does provoke this kind of continuing interest.

A third programme which introduces children to the full design process was organized by the Vancouver School Board's Recreation Department. In this programme any group of children in the 5th and 6th grades who wanted a playground were encouraged to select a site and develop a plan. The children had to consider how they wanted to use the playground; whether they wanted to climb, or crawl or swing; to build a castle or to find a boat they could use. They had to talk with various experts such as recreation specialists, architects, landscape architects, contractors and engineers to find out about the problems that had to be considered; safety factors, availability and suitability of materials; methods of construction and cost factors. They had to be able to raise half the cost of the playground within their own community, either through donated materials and labour or by fund raising. Then, with all these considerations in mind, the children designed their own playground, and made drawings and models to communicate their ideas. When their plan is ready they present it to the Vancouver School Board for approval. If the scheme is accepted the school board matches the amount the children have raised in the community, and the children build their playground.

Unfortunately the programme didn't always work out as planned because well qualified, well intentioned adults have been unable to resist the temptation to design the project for the children. These people undoubtedly produced very lovely playgrounds but by denying the children involvement in the process, they have lost sight of the really important aspect of the programme.

#### Conclusion:

There are excellent programmes available today which are based on a discovery approach to learning, but these programmes are usually directed towards helping children discover for themselves that which their teacher already knows. Children are seldom given the time and opportunity to inquire beyond this point, to experiment for themselves, to pursue non-verbal, non-abstract goals of their own, to learn to explore and effect their environment with thoughtfulness, artistry and competence.



## References

- Hartley, Frank & Goldenson. Understanding children's play.  
New York: Columbia University Press, 1952.
- Jones, R. Fantasy and feeling in education. Harper  
Colophon Books, 1968.
- McKeachie & Doyle. Psychology. Addison-Wesley, (2nd.Ed)  
1970.

---

Lydia Ferrabee is a Montreal based designer, design educator  
and design journalist.

This paper briefly outlines a Québec government sponsored programme for an "integrated" curriculum.

- "Que fais-tu maintenant?"
- "Je travaille à l'Intégration" ... Et me voilà parti dans des explications qui n'en finissent plus! Chaque fois que ça m'arrive, j'ai l'impression de répondre: "Je travaille à la généralisation"... et mon interlocuteur est lancé!... Aussi maintenant je choisis mon heure! Ça ne m'arrive plus jamais au coin d'une rue, s'il est tard ou si j'ai les bras chargés de paquets!

Il est déjà plus commode d'écrire sur ce projet, que d'en parler. Nous allons donc tenter ici de le définir et de le situer.

D'abord, "l'Intégration", c'est un projet scolaire du Ministère de l'éducation, à l'intention des enfants de l'élémentaire.

L'Intégration, c'est trois intégrations en une:

- 1- Intégration des moyens audio-visuels
- 2- Intégration des matières (scolaires)
- 3- Intégration de l'enfant à son milieu.

L'Intégration, c'est l'utilisation des moyens audio-visuels pour la mobilisation des potentiels intellectuels, affectifs et physiques de l'enfant, dans l'acte d'apprendre.

### 3.4

L'équipe qui travaille à ce projet depuis trois ans, a rédigé un rapport de cent quelques pages, qui donne une bonne idée de la nature du projet, de son orientation, et de ses stratégies d'implantation.

L'équipe en collaboration avec divers organismes a déjà complété quelques ensembles audio-visuels. Ses ensembles sont en circulation limités dans les milieux scolaires d'expérimentation. Des docimologues recueillent les réactions et les réponses des milieux consultés. Ce feed-back retourne à l'équipe qui en tient compte dans l'élaboration des ensembles audio-visuels en chantier.

Un ensembles comprend:

- 1- Un film déclencheur avec thème dramatisé, environ 20 minutes
- 2- Trois films courts - monovalant - notionnel ou démonstrateur, durée approximative 3 minutes chacun
- 3- Un jeu de diapositives, 15 à 25 diapos
- 4- Un jeu d'acétates - en cinq rabats
- 5- Un disque - 33 tours
- 6- Une bande magnétique - en cassette
- 7- Un document explicatif écrit.

Ce matériel d'alimentation, "software", est proposé avec un autre ensemble, celui du "hardware":

1 meuble synthèse: "Philidor" sorte de boîte à musique - écran et castelet qui comprend:

- L'écran plein jour
- le projecteur super huit sonore

- le projecteur à diapositives
- le tourne-disque
- le diascope
- le magnétophone à cassette
- et le haut-parleur auxiliaire.

Pour compléter ce bref exposé sur le projet Intégration, j'insère quelques pages tirées du rapport officiel. Le lecteur aura ainsi une meilleure idée du contenu du projet.

"L'Intégration concerne les contenus des différents programmes-cadres de l'élémentaire ainsi que leurs objectifs. Elle est surtout préoccupée par l'épanouissement de l'enfant qu'elle re-situe dans son milieu de vie enrichi par l'audio-visuel. Une telle mise en situation favorise le développement de la créativité et de toutes les potentialités de l'enfant, qu'elles soient physiques, sensorielles, intellectuelles, émotives, affectives, esthétiques, morales ou spirituelles.

L'enfant, au premier cycle de l'élémentaire, est aux niveaux pré-opératoire ou "opératoire concret". Il a besoin que tout passe par ses sens et il ne connaît bien que ce qu'il a fait.

L'école doit au maximum recréer le milieu naturel de l'enfant, sinon elle sera coupée de la vie de ce dernier. Pour l'enfant, sa vie, son vrai travail, c'est le jeu et l'audio-visuel est plus proche de la vie et du mouvement qu'un enseignement statique et magistral. Il permet une plus grande créativité et



une participation plus active à l'apprentissage. L'enseignement intégré par les techniques audiovisuelles soude le jeu et l'étude. L'enfant développe alors une ouverture d'esprit plus large en voyant presque tous les aspects ou les applications d'un problème.

Le projet Intégration veut centrer ses efforts sur les apprentissages fondamentaux. Un apprentissage est qualifié de fondamental lorsque son contenu est une habileté essentielle au développement harmonieux de tout être humain.

Pour apprendre à lire, il faut entre autres au moins avoir développé deux apprentissages fondamentaux: savoir voir ou regarder et pouvoir reconnaître un symbole. L'équipe voudrait donc enseigner aux enfants à "voir". Elle veut aussi favoriser la "reconnaissance du symbole". Là encore, plusieurs éducateurs affirmeront que le symbole sert aussi bien en français qu'en mathématiques. Ces apprentissages fondamentaux servent, ce que l'on oublie hélas! dans les arts et partout dans la vie courante.

Ma contribution personnelle dans l'équipe se situe au niveau de la recherche, de la scénarisation et de la production des films longs et des films courts.

---

**Camile Leduc:** Conseiller pédagogique au Ministère de l'Éducation, Québec.

investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investi investigart 1 investigart 1 investigart 1  
 investigart 1 invrt 1 investigart 1 investigart 1  
 investigart 1 ir 1 investigart 1 investigart 1  
 investigart 1 investigart 1  
 investigar' Jouer un  
 investiga' Programme aux Dés  
 investi' et Autres Jeux  
 invest de Chance  
 inves  
 inver  
 inve  
 inv  
 in  
 in  
 ir  
 ir  
 ir  
 ir  
 ir  
 in  
 inv  
 inve  
 inves  
 invest Ronald N. MacGregor  
 investi  
 investiga  
 investigart  
 investigart  
 investigart 1 in.  
 investigart 1 inv  
 investigart 1 invest  
 investigart 1 investigart 1 stigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 PRINTemps 1973 SPRING 1973 investigart 1 SPRING 1973 PRINTemps 1973

"Roll a Curriculum and Other Games of Chance" was  
 originally published in Fine (Journal of the Alberta  
 Fine Arts Council). We are grateful for Dr. MacGregor's  
 permission to reprint it in French. (Translation by  
 Mme. Michèle Drouin-Martineau and Mlle. Lucie Duranceau).

This author examines the role and function of provincial curriculum guides. He reaches the following conclusions: they are not written for teachers; they are not written for students; they are not sufficiently specific; they are not sufficiently general; they have little theoretical consistency, and contain even less that is strictly practical . . .

The paper contains proposals to remedy the situation, central to which is the setting up of a provincial art curriculum data bank.

Quand je demande à un professeur d'art une évaluation de l'utilité d'un guide de programme artistique provincial, mon expérience me dit que je peux m'attendre à l'une de ces deux réactions: ou bien, au sourire poli mais sans gaieté, comme si je venais de faire une plaisanterie d'un goût douteux, ou bien, un rejet immédiat du sujet comme s'il n'avait aucune importance. "Je l'ai feuilleté, mais il n'y a rien là-dedans pour moi." En tant qu'un de ceux qui étaient directement concernés dans les premières étapes de développement d'un de ces guides, je me suis d'abord senti vexé par une telle apathie. Il est difficile, après tout, de ne pas être apprécié. Mais des réponses négatives, (à tout le moins neutres) répétées de ceux qui devraient être les principaux usagers du document amènent l'auteur même le plus sûr de lui à conclure que son produit ne répond pas aux besoins de ses clients. Quelle que soit la fonction d'un guide de programme, ce n'est sûrement pas de ramasser de la poussière sur les étagères oubliées des classes d'art de la province.

La réflexion qui a suivi m'a amené à plusieurs conclusions mélancoliques en ce qui concerne nos guides de programme d'art: ils ne sont pas écrits pour les professeurs, ils ne sont pas écrits pour les étudiants; ils ne sont pas suffisamment spécifiques: ils ne sont pas suffisamment généraux; ils ont peu de consistance théorique et encore moins d'application pratique. Par-dessus tout, ils ne sont pas représentatifs de ce qui est couramment enseigné dans les classes d'art de l'Alberta, et offrent peu d'espoir d'être les précurseurs adéquats de ce qui pourrait y être enseigné dans l'avenir.

La seule notion d'un guide provincial est, je le soupçonne, un anathème pour beaucoup de professeurs d'art. Son caractère public menace l'image qu'ils se sont faite d'eux-mêmes, d'être des praticiens aux lois d'arcanes mystérieuses auxquelles ils sont les seuls à pouvoir répondre. Leur refus d'articuler des objectifs spécifiques pour leur classe engendre de l'effarement et de la confusion dans les esprits rangés des administrateurs scolaires. Privé de lignes de conduite ou de moyens semblables pour évaluer ce qui se passe, l'administrateur préfère souvent se tenir aussi éloigné de la classe d'art et prendre le professeur en confiance. Le professeur, de son côté, va au meilleur de sa connaissance et ne se préoccupe aucunement de ce que ses collègues peuvent être en train de faire. S'il voit des parties de sa démarche qui se reflètent dans les activités proposées par le guide de programme, c'est une coïncidence et non le résultat d'un alignement délibéré avec elles.

Les activités artistiques prennent forme en tant que résultat d'un échange entre un professeur et un groupe d'individus, et le caractère de cette interaction paraît être un premier déterminant des activités artistiques tentées. Le professeur peut favoriser un programme dans lequel se produit une individualisation complète; ou il peut développer des assignations pour la classe en entier; ou, encore, il peut alterner entre ces deux approches. C'est aussi une part de la responsabilité du professeur de déterminer le contenu du cours gardant à l'esprit les limitations physiques et administratives imposées par un cadre particulier d'éducation. Un programme d'art, en somme, est le produit de contraintes spécifiques et individuelles.

Cependant, les guides de programme sont dirigés non pas vers un étudiant mais vers l'étudiant, vers d'hypothétiques constructions plutôt que vers de réelles communautés. En aucun temps, dans n'importe quel guide, on s'adresse directement aux étudiants; il n'y a pas de feuilles détachables, pas de matériel d'auto-instruction. Comme le courrier publicitaire qu'on livre aux locataires d'un immeuble sous le titre, "A l'Occupant", les contenus du guide sont pour tous et personne.

La consultation des guides en vue d'information sur les procédés et les techniques artistiques est, la plupart du temps, un exercice en frustration. Des exceptions isolées se présentent, telles que les recettes de glaçures dans le guide du Deuxième Cycle du Secondaire, mais généralement, l'information est insuffisante pour le novice. Pour de plus amples détails, on le réfère à d'autres livres, à des films et à des diapositives, et l'on peut voir la logique de cette référence. Ne pas le faire aboutirait à la compilation d'un guide de programme de proportions gigantesques, produit à des frais considérables pour un groupe de personnes dont la formation et l'expérience variées pourraient bien rendre superflus beaucoup de ces conseils.

J'ai suffisamment débattu ces questions, et je n'ai besoin que de mentionner un autre groupe de clients qui pourraient être trompés par ce que les guides courants ont à dire en termes de philosophie de l'éducation. Il a été noté que si tous les philosophes du monde étaient mis bout à bout, ils n'en viendraient pas à une conclusion. Ceci, cependant, est précisément ce que l'on demande de faire aux membres d'un comité de programme. A la place d'une conclusion, le résultat est souvent un compromis qui ne laisse même pas les membres du comité satisfaits. Se servir de cette solution de compromis comme d'un indice de la philosophie qui prévaut en éducation artistique dans la province - comme on peut



demande de le faire aux superintendants et aux superviseurs- consiste à faire des suppositions sur l'eclectisme non engendré dans les programmes qui sont élaborés par ceux qui l'appliquent à leurs situations d'enseignement.

Les guides provinciaux, sous leur forme actuelle, ont un rôle impossible à remplir. On s'attend à ce qu'ils soient des documents politiques, des centres d'information et des sources directes de développement de programme. Aucun véhicule ne peut servir également toutes ces fins. Pourtant, si nous les considérons comme des fonctions autonomes et séparées, devant être conçues sous des formes qui diffèreraient radicalement l'une de l'autre, nous pourrions commencer à satisfaire quelques-unes des attentes variées des professeurs, des administrateurs, des représentants du gouvernement et des autres.

Le problème de base, celui de fournir de l'information sur des techniques et des procédés sur une base à l'échelle de la province, ne peut être résolu par une distribution massive de matériel imprimé dans aucune forme monolithique. Cependant, le professeur qui désire savoir comment faire une sérigraphie, ou ce qui peut remplacer la cire dans le procédé du batik, devrait pouvoir trouver ce renseignement rapidement. Les guides de programmes actuels, en référant le professeur à des livres qui pourraient ne pas exister dans la bibliothèque de l'école ou à des films qui doivent être réservés des mois à l'avance, faillissent en ne procurant pas une solution convenable à ce dilemme. Une banque centralisée d'information qui fournirait des instructions systématiques sur les aspects purement mécaniques de n'importe lequel d'un grand nombre de ces procédés pourrait être une alternative plus satisfaisante. Le Bureau Administratif Provincial serait le local d'une telle banque d'information; les fournisseurs des renseignements, les professeurs eux-mêmes; et les usagers, les professeurs et les étudiants.

Initialement, une feuille de papier qui démontrerait un format standard d'une brochure d'instruction et un résumé de quelques-unes des difficultés associées à l'organisation de matériel auto-instructif pourraient être envoyés aux professeurs qui s'offrent à contribuer. Par la suite, l'addition d'une liste des brochures déjà en filière devrait éliminer la duplication. L'expérimentation de chaque nouvelle addition à la banque d'informations serait effectuée de la façon la plus pragmatique: si elle était jugée défectueuse ou incomplète, l'utilisateur la retourne en même temps qu'une liste détaillée de ses imperfections et des révisions seraient faites immédiatement par le person-

nel de la banque d'informations en collaboration avec l'auteur de la brochure.

La seconde formule, celle prise par un modèle de programme à l'usage de la classe gagne à être assemblée par ceux qui sont directement engagés dans son utilisation - le professeur et les étudiants. Idéalement, elle devrait être à la vue et continuellement utilisée: un programme qui est hors de vue (dans le vieux sens du mot) risque aussi de l'être de la pensée.

Une de mes étudiantes(1) a récemment élaboré un modèle qui illustre ce problème magnifiquement. Il consistait en cinq blocs de 2"x2", chacun coloré selon un code qui représentait des éléments de Perception, de Matériel, d'Informations de procédés, d'environnement et de Critique/Evaluation. Sur chacune des facettes d'un bloc était inscrite la forme par laquelle l'élément pouvait être interprété: par exemple, le bloc "Matériel" montrait terre, peinture, carton, corde et fusain.

L'usager roule le bloc comme s'il s'agissait d'un dé. S'il s'arrête au mot, corde, sur le dessus, cela signifie que le projet doit être réalisé avec des cordes; si le mot, terre, avait été choisi, l'usager aurait travaillé avec de la terre et ainsi de suite. La nature du projet lui-même peut être décidée en roulant le bloc "Perception". En assumant que "distance" est écrit sur une des facettes et que le bloc en vient à s'arrêter avec ce côté sur le dessus, nous pouvons voir que l'étudiant est maintenant engagé dans un projet en rapport avec l'expression d'un sens de la distance, en utilisant de la corde comme médium.

L'étudiant peut rouler autant de blocs qu'il le désire jusqu'à un total de cinq, chaque roulement constituant une limite additionnelle au projet entrepris. Il revient à l'étudiant de déterminer le nombre des limitations qu'il veut s'imposer. Une plus grande flexibilité est possible si l'étudiant écrit ses propres choix sur chaque bloc, plutôt que d'employer ceux qui sont déjà inscrits sur les facettes. Dans ces circonstances, l'on attendrait de l'étudiant qu'il défende son choix en autant que leur accord avec le thème de chaque bloc est concerné.

Des alternatives à "Jouer un Programme aux Dés" qui encouragent l'étudiant à créer ses propres séquences d'activités pourraient prendre la forme de cellules moléculaires, chaque "noeud d'expérience" relié à ses voisins par des "lignes de concepts"; ou des éléments "agrafables" que l'on crée pour servir de points de départ à de nouvelles expériences

autant que de dossier pour le travail fini. Par ces moyens et d'autres semblables, l'étudiant peut littéralement planifier son propre progrès, alors que les professeurs disposent de moyens pour vérifier les lignes de conduite que les membres de la classe poursuivent.

Le troisième intérêt des planificateurs de programme, celui de fournir quelques indications claires sur le caractère de l'éducation artistique dans la province, telle qu'elle est aujourd'hui ou ce qu'elle pourrait être dans l'avenir, prend naissance dans les requêtes politiques. La publication récente du Rapport de la Commission de Planification Educative(2) était accompagnée de demandes aux corps professionnels de l'Alberta tout entière de faire connaître leurs réactions au Comité du Cabinet de l'Education. Présentement, nous n'avons pas de renseignements facilement disponibles sur la conduite de l'éducation artistique dans les différentes régions de la province, de même que nous n'avons aucune indication formelle des orientations que nos professeurs souhaiteraient que l'art prenne dans les écoles au cours de la prochaine décennie. Toute réponse au Comité du Cabinet de l'Education faite par le Conseil des Beaux-Arts ou par des localités de professeurs doit habituellement dépendre d'un conseil impromptu ou de n'importe quel matériel qui se trouve alors en filière.

Un document destiné à fournir l'information convenable pour satisfaire des cas comme ceux-ci pourrait consister en des résumés de programmes d'une page, enseignés par quelques professeurs choisis au hasard par un échantillonnage à tous les niveaux, comme représentants des divisions démographiques majeures de la province. De plus, un professeur d'art expérimenté serait invité à fournir un pronostic général des courants en éducation artistique et de leurs implications pour les programmes d'école de la province. Finalement, il devrait y avoir une section consacrée aux recommandations des professeurs d'art eux-mêmes pour l'amélioration de leurs intérêts. Le congrès annuel du Conseil des Beaux-Arts donne évidemment aux professeurs le cadre idéal pour présenter des résolutions qui affectent l'orientation future de l'art dans la province. Celles-ci devraient former au moins la dernière partie de cette section finale.

Armé d'un pareil document, le superintendant ou le Ministre se trouve dans une bien meilleure position qu'en cas habituel pour parler avec assurance de ce que ses clients attendent, et de ce qu'ils font dans le but que leurs attentes se réalisent. Une révision annuelle confèrera de plus l'avantage de demeurer contemporain, qualité dont ne jouissent pas les guides de programme conventionnels. La mécanique requise

pour mettre cet aspect à jour est tellement lourde que le guide est vieilli au moment de son impression et irrémédiablement surramé quand un groupe de révision est créé.

Je n'ai aucun doute que, en supposant que l'on implante toutes ces propositions, il y aurait encore des professeurs qui choisiront ni de contribuer, ni d'utiliser les techniques de la banque d'information artistique; ceux dont les classes continueront à être dédiées à la copie du Truc du Mois dans les revues pour l'enseignant; ceux que l'on ne peut jamais persuader de se montrer aux congrès professionnels. Mais pour ceux qui désirent une part active dans l'élaboration de l'éducation artistique de cette province, les alternatives que je viens de décrire offrent des moyens pratiques d'y arriver.

#### Références

1. Je suis reconnaissant à Madame Suzan Ashworth, une étudiante graduée en éducation artistique de l'Université de l'Alberta, pour l'idée de "Jouer un Programme aux Dés". La permission de le reproduire, ou d'en faire un usage public, doit lui être demandée, a/s Département de l'Education Élémentaire, Université de l'Alberta, Edmonton.
2. Rapport de la Commission de Planification Educative, Edmonton, Imprimeur de la Reine, 1972.

---

R.N. MacGregor est Professeur Associé en Education Artistique à l'Université de l'Alberta, Edmonton.

L'administration des arts et l'animation culturelle sont des professions qui percent. Elles représentent en tant que telles un besoin urgent d'initier et d'élaborer des programmes d'entraînement efficaces et d'entreprendre des recherches de base qui auront



pour objet d'atténuer les conditions défavorables et d'enrayer les idées fausses et les quiproquos. On doit avant tout accorder une importance majeure à la formation d'administrateurs des arts et d'animateurs culturels au sein des structures de politiques nationales et internationales et de leur mise en application. Mais il faut plus encore! On doit assurer en plus le développement de systèmes viables afin que les administrateurs de l'art, les animateurs culturels et les institutions culturelles, les artistes, les centres d'éducation, les ministères et leurs agences ainsi que le grand public puissent communiquer, collaborer et coopérer entre eux. Le défi est grand mais il en vaut la peine.

### A Global Concern:

There is a danger sweeping the world at present. It is the danger of excessive preoccupation with technological, economic and industrial matters. It is confining the shaping, sharing and elevating of cultural values and practices. It is damping creative and personal expression and genuine social interaction. It is acting as a negative rather than a positive force, since it is retarding the spread of cultural humanism, constraining the possibilities for national and international cultural exchanges and restricting the progressive enrichment of cultural experiences for all people throughout the globe.

If human and cultural experiences are to occupy the central position that they deserve in contemporary society, present cultural values and practices must be extended well beyond the social and economic elite in all societies. A great deal of this need for expansion of cultural activities, democratization of cultural participation and decentralization of cultural opportunities is contingent on the effective training of arts administrators and cultural animateurs in all countries over the next decade.

At present there is a critical, if not catastrophic, global shortage of qualified arts administrators and cultural animateurs. In most countries, these two professions lack formal definition within the cultural community and real recognition and acceptance by the general public. Although these two professions share certain similarities, there are also several distinct differences.

In general, arts administrators are more concerned with and responsible for the internal managerial practices and administrative stability of performing and exhibiting cultural institutions, governmental cultural departments, art centres and festivals and cultural associations. As a result, the basic functions of arts administrators include responsibility for administrative policy, long-term cultural planning, budgeting and fiscal control, publicity and public relations, as well as protection of artistic integrity and creative freedom.

The functions and responsibilities of cultural animateurs are more general and elusive. Cultural animateurs are more concerned with the diffusion, democratization and decentralization of various forms of cultural expression and experience as well as with the creation of new cultural values and tastes. More often than not, this will lead the cultural animateur into the area of the social, psychological and cultural plight of the individual and the reasons for his

alienation from either culture or society. This requires the development of unusual sensitivities, perceptions, creative and technical abilities and the courage to live under conditions of great risk, uncertainty and insecurity.

Regardless of similarities and differences, effective training programmes for arts administrators and cultural amateurs must be initiated without delay. Furthermore, these programmes must occupy an integral part and central priority in the formulation and execution of cultural policies. Without qualified and effective arts administrators and cultural amateurs, cultural expression will deteriorate in substance and will be severely restricted in form and content.

#### The Canadian Context:

As the second largest country in the world, Canada stretches across a giant land mass. In physical terms it is larger than Europe, China, India or the United States, since it covers an area of almost 10 million square kilometers. Nevertheless, Canada has a comparatively small population. Its 20 million people yield an average of half a square kilometer per inhabitant - one of the lowest average population densities in the world. However, since the bulk of Canada's population is concentrated in a thin band along the Canadian-U.S. border, Canada does experience pockets of population concentration similar to many countries throughout the globe. For example, three of Canada's major urban centres - Montreal, Toronto and Vancouver - account for virtually one-third of Canada's total population. All of these cities are located in very close geographical proximity to the United States.

Since distances between population concentrations in Canada are very great, communication and transportation problems dominate much of Canada's historical and contemporary development. In fact, many of Canada's foremost historians have contended that communications problems are central to Canada's history and destiny, since a great deal of Canada's energy and ingenuity must be directed towards solving these fundamental and difficult problems.

In social terms, Canada has never pursued a "melting pot" theory of the social process. As a result, Canada is characterized by ethnic and social diversity, which has recently led the Federal Government to espouse the official concept of bilingualism within a multicultural framework. Although French and English represent the official languages and founding cultures in Canada, there exists a great

respect for other languages and cultural traditions and a strong desire to encourage cultural enrichment through cultural diversity and to weave cultural diversity into the fabric of Canada's cultural life.

In the final analysis, it is the nature of Canada's demographic circumstances, social and cultural heterogeneity and the traditional and contemporary influences of France, England and the United States that help to explain the present state and future directions of cultural development in Canada.

#### Cultural Development in Canada:

Although Canada's cultural history is short in comparison to many other countries, Canada has already recorded a long list of cultural accomplishments of domestic and international significance. During their short histories, the National Film Board and the Canadian Broadcasting Corporation have won major international acclaim for the quality and creativity of their programming. As one of the most visible national cultural agencies in Canada, The Canada Council is respected within and beyond the boundaries of Canada for its courage, determination and vision. Almost every time a Canadian cultural organization travels abroad, there is instant artistic recognition and critical acclaim. At an increasing rate, Canada's outstanding creative and performing artists - composers, writers, actors, singers, architects, photographers - are winning international attention for their unusual cultural accomplishments.

During the past two decades, the pace and tempo of cultural development in Canada has quickened considerably. The quantitative growth and qualitative improvement in Canada's cultural institutions in the performing, exhibiting, media and environmental arts has been particularly rapid. The length of seasons has been considerably extended. The salaries for performing and creative artists have risen dramatically. Touring and extension activities have increased in both domestic and international terms.

This rapid expansion has not been limited to Canada's major cultural institutions. In fact, a concomitant growth has been realized among Canada's smaller cultural institutions. There has been a rapid expansion of theatre and dance companies, film agencies, art galleries and museums, cultural centres, arts festivals, craft organizations and mixed-media and multi-media activities. This exciting cultural expansion in Canada has been paralleled by a growing concern for democratization and decentralization of cultural activities and opportunities as well as for innovative and

experimental approaches to various forms of cultural expression.

In terms of the broadening of cultural participation, cultural activities are beginning to affect larger and larger segments of Canadian society, since they are being made more accessible to the young, different ethnic groups, labour, low-income families, rural workers, and senior citizens. This concern for greater cultural access is expanding more and more the locations of various forms of cultural expression from arts centres, concert halls, galleries, museums and theatres to the larger environment - streets, parks, shopping centres, hospitals, prisons and social and recreational centres.

This broadening of cultural participation has been matched by a deepening of cultural awareness in Canada. Across the country, there are many people who are anxious to explore and experience the artistic and creative process itself, as creative artists do, through direct experience and participation in the cultural process. This desire has fundamental implications for the training of arts administrators and cultural animateurs.

#### The Critical Shortage of Cultural Animateurs and Arts Administrators:

The sudden and dramatic proliferation of cultural activities, combined with the changing nature of cultural participation has highlighted the critical shortage of trained personnel in almost all areas related to cultural development in Canada. The changing role of formal and informal cultural education in total curriculum requirements has revealed a singular deficiency of trained and professional arts educators in elementary and secondary schools as well as in community colleges and universities. A basic shortage of technical experts has appeared in many of Canada's cultural organizations. With the rapid expansion of cultural institutions, a basic shortage of arts administrators for performing and exhibiting cultural organizations, publishing houses, radio, television and film agencies, governmental cultural institutions and cultural service organizations has been revealed. Finally, there is an increasing demand for community cultural organizers who can organize and administrate cultural activities and programmes in various urban and rural environments, as well as for cultural animateurs who can work with people in communities to increase general cultural awareness.

As elsewhere, arts administration, cultural animation and community cultural organization represent emerging, rather



than established professions in Canada. As emerging professions, they all display similar characteristics. They all lack formal definition as professions and it is not always possible to distinguish clearly among them. Although salaries paid for these professions vary considerably, salaries are low in absolute terms and in relative terms when compared with other professions. In addition, there is a virtual lack of fringe benefits, particularly outside government institutions. Finally there are insufficient opportunities for representatives from these professions to meet together to discuss common problems and interests.

#### Training Programmes for Arts Administrators:

Until very recently, there has been virtually no opportunity to acquire formal educational training in either cultural animation or arts administration in Canada. As a result, in many cases, arts managers and administrators had to "slip in the back door", so to speak, if they wanted to pursue professional careers in this area.

Fortunately, during the past five years, this situation has started to change. In fact, at the present time, Canada probably possesses more training programmes for arts managers and administrators than any other country in the world, since educational programmes in arts administration, or the equivalent, are being developed at York University (Toronto), The University of Toronto, the Banff School of Fine Arts and Advanced Management, the University of Quebec at Montreal, Algonquin College of Applied Arts and Technology in Ottawa, Ryerson Polytechnical Institute in Toronto, Niagara College of Applied Arts and Technology at Niagara-on-the-Lake, Ontario, and Sir Sandford Fleming College in Peterborough, Ontario. All these educational programmes are developing in conjunction with either universities or community colleges and, since education is a provincial rather than federal consideration in Canada, most of these programmes have a local or provincial orientation.

#### Training Problems and Prospects:

In principle, the training of qualified and effective arts managers and administrators presents major difficulties for three fundamental reasons. First, an effective training programme must successfully integrate sensitivity for artistic activity and creativity with an unusual command of basic managerial, financial and promotional methods and techniques. As a result, an interdisciplinary training is required which reconciles and blends two distinctive and

contradictory value systems and sets of perceptions. Secondly, there must be a successful mixing of theoretical training and practical experience. Finally, an effective programme must prove capable of balancing the more particular and specialized training in planning, budgeting and operational management with a more general training in aesthetics, organizational development and cultural policies and practices.

It is of fundamental importance to consider the implications in each of these three problems separately. At the outset, consider the conflicting value systems of artistic and corporate processes. Many cultural activities are characterized by a high degree of creative behaviour. As such, artists tend to feel comfortable in a creative, artistic environment, characterized by rapid change, spontaneity and intuitive action and response. In direct contrast, general corporate activity is characterized by concern with permanence and continuity, planning and forecasting, empiricism and factual analysis and efficiency and productivity. These two value systems are exceedingly difficult to reconcile and synthesize, which creates problems of enormous importance in the effective training of arts managers and administrators. Cultural institutions occupy a position in society where the artistic community expects artistic and creative results, whereas the funding community and the general public expect not only a certain artistic mastery but also effective administration of human, physical and financial resources. It is in this area that a search has been commenced for the effective qualities and qualifications required in an arts manager or administrator, since this will fundamentally affect the screening procedures that are established to determine the suitability of candidates seeking entrance into the profession. In short, the competent arts administrator must learn to play a sliderule like a violin, or, as one administrator recently remarked, he must have "the ability to reconcile creativity with accountancy".

In Canada, all training programmes are devoted to some form of integration of academic training with practical experience. Traditionally, universities and community colleges have not been particularly interested in this problem as many educational institutions have been concerned with theoretical training and it has been left to the "real world" to provide the practical experience. Slowly, this view is starting to change. All training programmes in arts management and administration in Canada require pre-internships or post-internships in cultural organizations as a fundamental prerequisite of occupational training. In addition, practicing arts managers and administrators are often brought to participate in lectures, seminars and related activities.

It is difficult to determine whether the initiative for mixing academic training and practical experience has come from the academic community or the cultural community. Regardless of the source of initiative or the motivation, the results to date have been most desirable. Practical exposure has tended to soften the blow of "real world" situations by making the academic experience more concrete and relevant as well as placing practical constraints on academic theorizing. Even with the appropriate practical training, however, there are still many practicing arts managers and administrators in Canada who believe that it is impossible to train potential participants in the profession in an academic environment, since there are too many unteachable qualities and unusual sensitivities required. It is interesting that this same attitude persisted in the business community prior to the successful establishment of many business schools several decades ago!

Finally there is the problem of blending specific and general courses of study. In specific terms, students must be exposed to such subject areas as accounting, budgeting, planning and forecasting, marketing, publicity and promotion, finance, production, performance and display, labour relations, law and the arts, personnel management, and artist, administrative staff and board relations. However, it has become evident that one of the great barriers to a dynamic and cultural development in Canada as well as internationally is the inability of many existing creative and performing artists, and arts managers and administrators, to transcend particular problems and specific needs. As a result, most training programmes in Canada are attempting to expose emerging professionals to the general problems of national and international cultural policies and practices, governmental activity in the cultural sector, the economics and sociology of culture, cultural anthropology and the philosophy of aesthetics. In the final analysis, each student must be able to analyse forces and trends in cultural development and locate cultural institutions within an appropriate historical and environmental context in order to perceive present problems and future prospects in terms of past problems and developments.

Since representatives of the cultural community often have neither the time, financial resources nor expertise to conduct major research into particular or general cultural problems or needs, most training programmes in Canada are extending their activities even beyond the strict confines of academic training and practical experience. Theoretical and applied research has been commenced recently in such areas as audience development, case and policy studies of cultural organizations, business and the arts, the economics

and sociology of culture, arts management and administration as a profession, the funding of cultural activities and trends cultural development and policy. In addition, intensive seminars, conferences, workshops and special non-degree courses are often arranged for practicing arts managers and administrators as a means of assisting practitioners in the acquisition of more knowledge and expertise about the profession and its requirements.

#### The Training of Cultural Animateurs:

If training programmes in arts management and administration are still in their infancy and in a state of embryonic development in Canada, training programmes for community cultural organizers and cultural animateurs are virtually non-existent, although several attempts have been made in recent years to develop learning experiences in this area. And yet, in terms of the need to democratize and decentralize cultural opportunities, expand audiences for cultural activities and increase participation in cultural processes, there can be no greater need in Canada or throughout the globe at the present time.

It has already been suggested that the training of arts managers and administrators is difficult because it requires an interdisciplinary rather than a specialized learning situation. The need for an interdisciplinary learning situation is even greater in community cultural organization and animation. In particular, the objectives of cultural animation can be exceedingly diverse. In some cases, the objective may be to expand the cultural perceptions or awareness of an individual or group. In other cases, the objective may be to explore and improve the aesthetic environment, expand audiences for various cultural processes and products or increase collective cultural expression. At any rate, the range of objectives can be so broad and the skills required so diverse that a training that links experience in the arts, psychology, sociology, political science and urban government and administration is mandatory.

Whereas training programmes in arts administration in Canada are fundamentally linked with universities and community colleges, the trend in cultural animation training in Canada is to link training programmes to various experimental cultural programmes and institutions. Perhaps this is as it should be. The training of cultural animateurs must be seen as an experimental process, whereby potential cultural animateurs and community cultural organizers can live and work with professional and skilled cultural animateurs and organizers in actual situations.

Although the successful cultural animateur must be concerned

with the spread of cultural products, his real concern must be with the progressive deepening of cultural awareness and perceptions through the use of cultural processes. He must prove capable of using the materials and qualities of cultural expression - sounds, shapes, textures, design, movement, rhythm, and perspective - to activate audience interest and participation. In a sense, then, the cultural animateur or community cultural organizer may often be a creative artist with a social conscience and responsibility, since he is interested in sharing his studio experiences and personal values with the whole of mankind. He must help other people to rediscover dormant artistic talents, transcend creative inhibitions, and stimulate in other people a desire to explore the vastness and richness of genuine cultural expression and participation.

From the experiences in cultural animation in Canada to date, it is obvious that cultural animation is most successful when it starts slowly and quietly within a community, growing organically and following its own natural direction. The use of disruptive, shocking or confusing tactics will usually only lead to group confrontations that are inimical to the collective and participatory experiences so vital in successful cultural animation. For similar reasons, the cultural animateur is most successful when he moves progressively from the familiar and simple to the unfamiliar and complex. As a cultural animation group coalesces there is a lessening need for external stimulation and the original catalyst or animateur can leave the group once a new leader has been developed.

On a broader scale, the effective cultural animateur or community cultural organizer must possess the altruism, flexibility and imagination to work with a broad diversity of community and social groups and to progressively eliminate cultural isolation by relating cultural activities to other social, economic, educational and political activities in the community. Only in this way will the cultural circumscription of past decades be eliminated.

#### Conclusion:

Contemporary arts administrators and cultural animateurs share much in common with the nineteenth century country doctor. The conditions under which many nineteenth century doctors worked were often next to intolerable. He was both generalist and specialist. He had to make do with little formal education. Often, surgery had to be performed on location with inadequate equipment and laymen volunteers pressed into service. Medical research was deficient and

what little information did exist was poorly circulated. As a result, the nineteenth century country doctor became a product of his circumstances and often worked on intuition, hunches and educated guesses.

This analogy contributes much to the understanding of the plight and predicament of contemporary arts administrators and cultural animateurs. There is still too little opportunity for formal educational training. Where training does exist, the instruments are still crude in form and experimental in nature. There are glaring deficiencies in research and knowledge, and basic information about the needs, trials, tribulations and rewards of these professions are not circulating in a manner conducive to national and international cultural development.

Arts administration and cultural animation are emerging professions. As such, they are characterized by an urgent need to initiate and develop effective training programmes and undertake basic research designed to alleviate adverse conditions and erase common misconceptions and misunderstandings. Above all, central importance must be awarded to the training of arts administrators and cultural animateurs within the fabric of national and international cultural policies and practices. But, more is required. In addition, viable systems of collaboration, cooperation and communication must be developed among arts administrators and cultural animateurs and cultural institutions, artists, educational institutions, governmental departments and agencies and the general public. The challenge is immense. But, then, so too are the rewards.

---

D. Paul Schafer is Director of the Programme in Arts Management and Administration at York University, Downsview, Ontario.

investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investi investigart 1 investigart 1  
 investigart 1 invrt 1 investigart 1  
 investigart 1 ir 1 investigart 1  
 investigart 1 investigart 1  
 investigart 1 investigart 1  
 investigart 1 investigart 1  
 investi' The Similarity of  
 invest Hierarchically Organized  
 inver Pairs of Pictures  
 inve Reported by Field-depend-  
 inv ent & Field-independent  
 in High-School Seniors  
 in  
 in  
 ir  
 ir  
 ir  
 ir  
 ir  
 in  
 inv  
 inve  
 invest  
 investi  
 investiga William Winn  
 investigart  
 investigart  
 investigart 1 in.  
 investigart 1 inve  
 investigart 1 investige  
 investigart 1 investigart 1 stgart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 investigart 1 investigart 1 investigart 1 investigart 1 investigart 1  
 PRINTemps 1973 SPRING 1973 investigart 1 SPRING 1973 PRINTemps 1973

Dix-huit élèves au deuxième cycle du secondaire  
 furent divisés sur la base de leur champ d'ac-  
 tivité connexe. Leurs rapports sur la similitude  
 d'images d'objets appariés, dont la force d'asso-  
 ciation était variée en changeant la distance hié-  
 rarchique entre eux, furent classés en six caté-



## 6.2

gories. Comme la force d'association diminuait, les rapports de similitude devinrent plus difficiles à faire, plus idiosyncratiques, moins fréquemment nominaux, et plus fréquemment basés sur des aspects physiques et autres attributs distincts. Les sujets d'un champ d'activité indépendant firent plus de rapports nominaux et plus de rapports basés sur des attributs sans valeur de perception que les sujets d'un champ d'activité connexe, suggérant que les fondements d'un rapport de similitude entre des objets imagés ne dépend pas seulement de leur force d'association mais aussi d'habiletés perceptives innées.

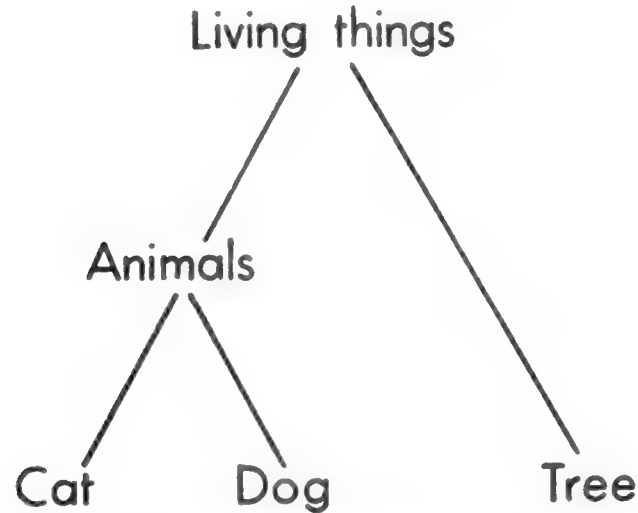
One of the most important perceptual processes, and one of the most basic, is the abstraction of relations invariant between two or more objects (Gibson 1969, pp.160-161). It is this operation which enables us to organize our world, to categorize the elements in it and ultimately to learn about it. The most superficial analysis of the structures formed by this process reveals that an invariant relation is frequently a perceived similarity between two objects, which means that frequently the organization of our world, and our learning about it, are the result of our ability to see similarities.

The way in which the perceived world is organized has been studied extensively. Work reported by Miller (1956) and by Mandler (1962, 1968) suggests that clusters of objects are formed in human memory from raw perceptual data. Such clusters place objects which have common characteristics in the same category, indicating a synthesis of a whole from its parts, an abstract category from its more concrete constituents. Moreover, it is reported that clusters themselves can form clusters, which leads Mandler (1968) to construct a memory model in hierarchical form, built from increasingly abstract categories subsuming more concrete ones.

In spite of this wealth of research in cognitive organization, little is known of the selection of perceived invariant relations between objects to establish categories. An invariant relation can be an attribute of colour, size, form, or even a property not perceptually present, but coming from previous experience of the object. Furthermore, the category can be nominal, based not on some single feature common to the objects, but on the incorporation of the objects as wholes into an all-inclusive superordinate class. A category can therefore be based on a wide selection of types of common attribute, as well as on nominal classification. A knowledge of the conditions under which a person selects a certain type of invariant relation in order to organize what he perceives - under what conditions, for example, he will establish a nominal category, or one based on common physical attributes - is important if the perceptual organization of the environment is to be understood. In this study, two sets of such conditions were examined; conditions both in the stimulus and in the perceiver. In the stimulus, the relative placement of two pictured objects in a hierarchy, such as Mandler proposes (1968), was varied with a view to examining the effect of this change on the choice of an invariant relation. In the perceiver, the effect of field-dependence on the same choice was studied.

Objects at a greater distance from each other in an

organizational hierarchy have fewer common attributes, and therefore lower interitem associative strength (Mandler 1968, p.117).



A Simple Hierarchy.

Figure 1

The simple hierarchy in figure 1 shows "cat" and "dog" to be placed closely together, both belonging to the fairly limited category "animal", while "cat" and "tree", belonging to a much more abstract category "living things" are at a greater distance from each other. "Cat" and "dog" have more common attributes than "cat" and "tree", and associate more easily to form a cluster. A decrease in interitem associative strength, that is in the number of common attributes, is accompanied by an increase in the difficulty of associating two objects (Mandler 1968, p.117). Using latency as a measure of the ease of making such an association, it was expected that as the distance between objects in the hierarchy increases, an invariant relation would take longer to report.

As it becomes more difficult to find a characteristic common to two objects, it can be expected that the basis for selecting an invariant relation between them will also change. As the number of common attributes decreases, a person will be obliged to search for increasingly obscure and idiosyncratic bases for similarity, and it will become less likely that the common characteristics he selects will be the same as those selected by other people. The uniqueness of a perceived invariant relation will increase as the objects in a pair become less similar. Mednick (1962) explains that the uniqueness of any response is simply

inversely proportional to its probability in a given population of responses. It was expected, then, that as the number of common characteristics decreased, the probability of a certain report of similarity not occurring would increase.

As the associative strength between two objects in a pair is reduced, the selection of an invariant relation can be expected to change in a second way. Binder (1955 p.121), writing of visual recognition, states that as the number of attributes of an object is reduced in a representation of it, the degree of ambiguity involved in assigning the object to a particular nominal category increases, and the greater this ambiguity, the greater the inclusiveness, the abstraction, of the class to which the object is assigned. This has been demonstrated experimentally by Fleming (1960), where verbal reports, identifying figures, became more abstract as the number of attributes decreased. In the case of pairs of objects, as the number of common attributes decreases, it would seem that the same might apply - that the abstractness of the category containing both objects would increase. However, faced with the difficulty of assigning two dissimilar objects to a highly ambiguous nominal category, a S might not establish such a category at all, but rather select one, or a few, common attributes, either perceptually before him or not, as a basis for a category to include both objects. This problem would be aggravated by the fact that in the case of associating two objects, though not in the case of recognizing one single object, as the number of common attributes decreases, the number of uncommon attributes increases, making a superordinate nominal category exceptionally broad if it is to include both objects as whole. In such cases of great dissimilarity, the process of synthesizing a category would remain at a fairly concrete level, where invariant relations are established on the basis of single attributes. The more abstract nominal categories would fail to materialize.

In this study, Ss were required to indicate their selection of an invariant relation and the establishment of a category by stating how pairs of pictured objects were similar. Their responses were sorted into six categories developed from the results of a free-sorting trial of responses from a pilot study. These were nominal, physical attributes, abstract characteristics, function, location and value. For example, "cat" and "dog" might be reported as similar because they are both animals (nominal), brown (physical attribute), gentle (abstract characteristic), because they both run (function), because they both live indoors (location), because they are both good (value). Of these categories, only nominal responses require the

integration of whole objects. The other five indicate associations based on parts of objects or even single characteristics. Using these categories, it was expected that as objects became less similar, the number of nominal classifications would decrease and the number of associations made on the basis of few or single characteristics would increase.

In addition to certain changes in the stimulus, it was expected that conditions in the perceiver would also have an effect on the selection of a relation invariant between two objects. Olson (1970) suggests that a person's ability to cope with anomalies presented by the juxtaposition of two dissimilar and apparently unreconcilable ideas, as in the present case of two dissimilar objects, depends largely on that person's imagination. Imagination is construed as "the ability to intellectually rearrange our perceptual experience," (1970, p.260), in order to reconcile and associate perceived objects. A satisfactory way to assess this ability to rearrange perceptual experience is to assess a person's field-dependence. Witkin (1954) makes a distinction between field-dependent and field-independent people, between those who cannot function well independent of support from the perceived environment, and those who can. Field-dependence can therefore be an indication of the degree to which a person can disengage himself sufficiently from what he perceives in order to manipulate it and rearrange it. It was expected that a field-independent person, capable of this disengagement, would be able to report an invariant relation between highly dissimilar objects which, to a field-dependent person, might be totally unreconcilable. Moreover, disengagement would enable the field-independent person to free himself from the immediate perceptual stimulus and establish a category from characteristics not actually before him.

In sum, this study sought answers to the following questions: how do the ease of selecting, and the type of the invariant relation between two objects in a pair, as indicated by reported similarity, change as the distance between them in an organizational hierarchy is systematically varied, and how are these changes influenced by a person's field dependence? The following hypotheses were tested:

1. As the number of attributes common to two objects in a pair is decreased, the difficulty in finding an invariant relation, measured by the latency of the response, increases.
2. As the number of common attributes decreases, the uniqueness of each response, that is the probability of its not occurring, increases.
3. As the number of common attributes decreases, the number of reports of similarity based on nominal classification (nominal responses) decreases, while the number of those

based on the association of some part of the object, or even on some single attribute (all five other types of response) increases.

4. Field-dependent Ss make slower reports of similarity than field-independent Ss.

5. Field-dependent Ss make more reports of similarity based on physical characteristics of the objects actually present before them (physical attribute responses) than field-independent Ss, who in turn make more reports of similarity based on attributes not actually present (all other types of response).

#### Method:

#### Materials:

Two hierarchies were constructed through which the number of attributes common to two objects in a pair could be varied. Two hierarchies were used to help counteract materials affects. They are shown in figure 2.

The associative strength of items in pairs made from the eight common objects on the bottom line of each hierarchy depends on the level of the superordinate category which includes both of them. In the first hierarchy, "cat" and "elephant" are both animals (level I), "cat" and "lemon" are living things (level II), and "cat" and "fork" are things (level III). The level of the superordinate category is an indication of what is called the order of relationship (OR) between the objects. Thus the pairs "cat" "elephant", "tree" "flower" have a first order relationship (OR1), the "cat" "lemon", "boy" "flower" relationships are second-order (OR2), and the "cat" "house", "ship" "flower" relationships are third-order (OR3).

Both sets of eight objects were selected from the Paivio, Yuille and Madigan norms (1968), with the restrictions that all were high on the three scales, imagery I, concreteness C, and meaningfulness m, (mean I = 6.70, mean C = 6.94, mean m = 7.06). All had Thorndike-Lorge (1944) frequencies of more than 25 per million. Variation on any of these four scales would influence the process of association (Paivio 1967; Paivio Yuille and Smythe 1966; Paivio and Foth 1970). Further restrictions were imposed by the need to ensure that only one classification in a superordinate category was possible for all possible pair combinations of the eight objects in each hierarchy. The criterion for this was class-inclusiveness. If a pair of objects could be classified in more than one category which included all members of the subordinate class, then that pair was rejected.

The two Organizational Hierarchies.

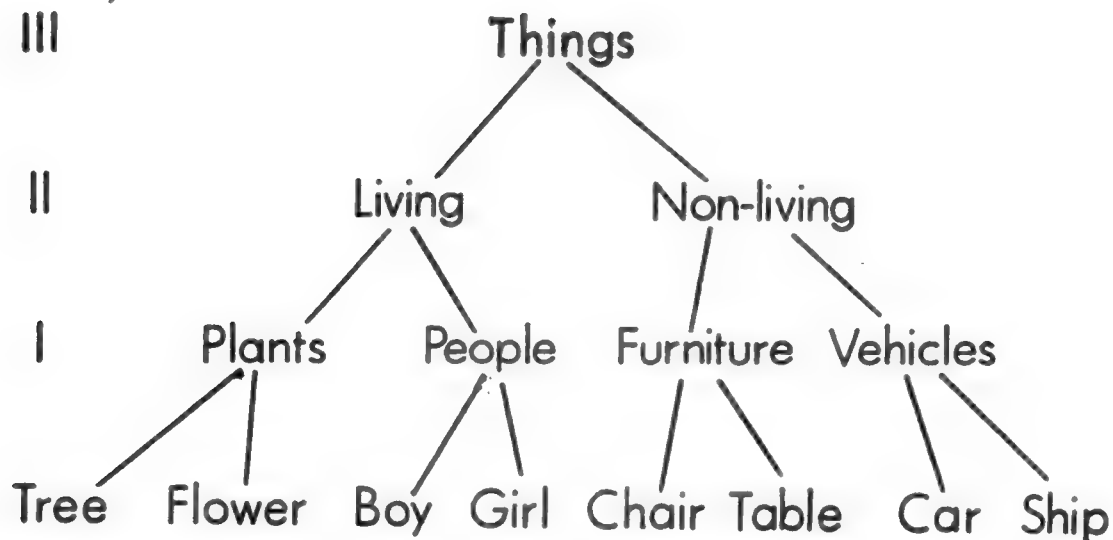
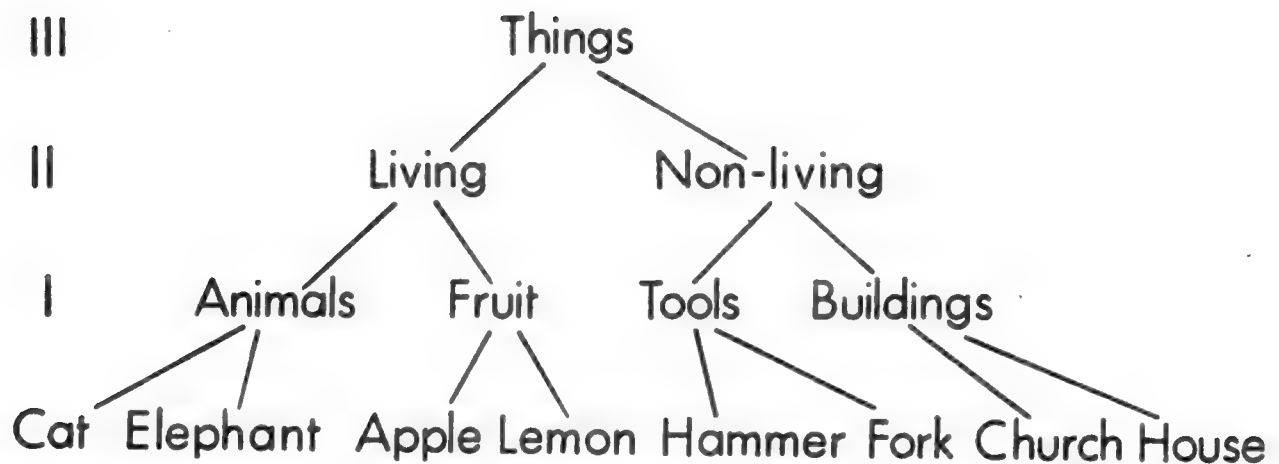


Figure 2

Pairs were formed from the two groups of eight objects in the hierarchies to make first- second- and third-order relationships. To counteract order effects, two random lists of twenty-four pairs were compiled, each of which contained four pairs of each type of OR for each hierarchy, with the restrictions that no stimulus item occurred more than once in each set of four pairs having the same OR, and



that no more than three pairs of the same OR or from the same hierarchy occurred consecutively. High-quality colour photographs of all the objects were found, they were cut out to remove all background, and were mounted in pairs on white cardboard. They were then photographed in 35 millimetre colour transparency film in such a way that both objects in each pair appeared side by side on a clear white background in the finished colour transparency. A total of forty-eight slides were prepared in this way, two lists of twenty-four. The slides were placed in order according to the lists and loaded into carousel trays ready for projection.

#### Procedure:

Eighteen high-school seniors were individually given the Witkin Embedded-Figures Test of field-dependence, in the short form developed by Jackson (1956). The split-half reliability of this test was found to be .826. On the basis of their scores, they were divided into three groups, field-independent (FI) the quickest third, field dependent (FD) the slowest third, and a middle group (FM) whose scores fell within the central third of the score distribution. Three Ss in each group were assigned to one of the random lists, and three to the other. Each S saw a total of eight pairs of each of the three ORs.

The Ss were tested individually on the similarities test. Each was instructed that he would see pairs of pictured objects, and that he was to say how the members of each pair were similar. He was to do this by completing the sentence, "They are both . . ." or "They both . . .," thus limiting the response to direct assessments of similarity, and avoiding other forms of association. The slides were projected by a Kodak Carousel projector onto a Klett tabletop viewing screen placed in front of the S. The S was given an example, together with several alternative responses selected from each response category. This was followed by a practice pair, with which the S was helped as needed. The main part of the experiment then began. For each pair, the actual verbal response was recorded verbatim. The response latency was measured by means of a stopwatch and also noted. If a S had not thought of a response in 120 seconds, the next slide was shown and a score of 120 was recorded.

The Ss' responses were sorted into the six categories (nominal, physical attributes, abstract characteristics, function, location and value) by five judges following rigid guidelines. Because the number of responses in the categories: abstract characteristics, function, location and value was too small to permit meaningful analysis,

## 6.10

these were combined to form a single third category, designated "other". Latencies and frequencies of each type of response were tabulated, and the uniqueness of each S's responses within an OR was found. Analysis was then performed.

### Subjects:

Subjects were seniors from Corydon High-School, Corydon, Indiana.

### Design:

A three-by-three factorial, involving OR as a repeated measure, and field dependence. Analysis of variance was performed on several dependent variables: response latency, response uniqueness, and the frequency of occurrence of each response type, nominal, physical attributes and other, after they had been converted to proportions.

### Results:

TABLE 1  
Response latency  
in seconds

OR	Group			
	FI	FM	FD	mean
OR1	3.31	4.24	3.75	3.76
OR2	10.42	14.95	12.83	12.73
OR3	18.96	21.82	23.78	21.52
mean	10.90	13.67	13.45	

Table 1 shows the response latency for each OR and for each type of S. The analysis of the latency data revealed a significant main effect. For OR,  $F(2,30) = 37.44$ ,  $p < .001$ . A Scheffé multiple range test showed only the OR1 and OR3 means to be different at the .01 level. This confirms

Hypothesis 1, which predicts an increase in response latency as the number of common attributes in pairs decreases. For field-dependence  $F(2,15) < 1$ , and was therefore not significant. Hypothesis 4 which predicts greater response latency for field-dependent Ss was not supported.

TABLE 2  
Response uniqueness

OR	Group			
	FI	FM	FD	mean
OR1	.675	.602	.621	.627
OR2	.831	.855	.811	.832
OR3	.887	.825	.912	.875
mean	.792	.760	.781	

A similar effect was found for response uniqueness, which is shown in table 2. For OR,  $F(2,30) = 11.68$ ,  $p < .001$ . A Scheffé test showed the mean for OR1 to be significantly different from the means for OR2 and OR3 at the .01 level, but that the mean for OR2 was not significantly different from OR3, indicating a levelling-off of the increase in uniqueness. Hypothesis 2, predicting an increase in uniqueness as similarity decreases, was supported by these data. For field dependence,  $F(2,15) = 1.64$ , and was not significant.

Table 3 gives the overall pattern of the frequency of each type of response, with abstract characteristics, function, location and value responses pooled. The decrease in total frequency for each OR as the associative strength decreases is due to a small number of missed responses. Eighteen Ss responding to eight pairs of each OR should have produced 144 responses. However, only for OR1 pairs was this total reached. For OR2 and OR3 pairs, Ss were unable to report similarity for a few examples. Before analysis, these raw scores were converted into interval data by expressing each S's score for each response type as a proportion of the total number of responses he made to pairs in each OR.

TABLE 3  
Frequency of each response type

OR	Response			
	Nominal	Physical attributes	Other	Total
OR1	99	34	11	144
OR2	44	60	39	143
OR3	7	72	55	134
Total	150	166	105	

TABLE 4  
Proportion of nominal responses

OR	Group			
	FI	FM	FD	mean
OR1	.708	.688	.667	.687
OR2	.354	.277	.292	.307
OR3	.093	.000	.069	.054
mean	.385	.321	.342	

The proportions of nominal responses made to pairs in each OR are shown in table 4. Analysis of variance revealed two significant effects. For OR,  $F(2,30) = 100.11$ ,  $p < .001$ , and a Scheffé test showed all means to be different at the .01 level. For field-dependence,  $F(2,15) = 6.17$ ,  $p < .025$ . A Scheffé test revealed that the only means significantly different at the .05 level were FI and FM.

TABLE 5

Proportion of physical attribute responses

OR	Group			
	FI	FM	FD	mean
OR1	.125	.250	.313	.229
OR2	.333	.470	.458	.420
OR3	.474	.695	.423	.563
mean	.311	.472	.398	

Table 5 shows the proportions of physical attribute responses. One significant effect was found. For OR,  $F(2,30) = 16.09$ ,  $p < .001$ . A Scheffé test found all means to be different at the .01 level. For field-dependence  $F(2,15) = 1.98$ , and was not significant.

TABLE 6

Proportion of other responses

OR	Group			
	FI	FM	FD	mean
OR1	.146	.063	.021	.070
OR2	.313	.253	.250	.272
OR3	.396	.306	.485	.396
mean	.285	.207	.252	

The proportions of other responses are shown in table 6. Analysis of variance revealed two significant effects. For OR,  $F(2,30) = 40.89$ ,  $p < .001$ . A Scheffé test showed the mean number of responses to OR1 pairs to be different from the mean for OR2 and OR3 pairs at the .01 level, but that there was no difference between OR2 and OR3. For field-

dependence,  $F(2,15) = 6.50$ ,  $p < .01$ . A Scheffé test showed that the only means different at the .05 level were FI and FM.

The findings for the frequency of occurrence of each type of response supports hypothesis 3, which predicts a decrease in the number of nominal responses and an increase in the number of all other responses as the number of common attributes decreases. The significant findings concerning field-dependence will be discussed separately later.

#### Discussion:

The results of this study show a change in the performance of cognitively mature Ss, twelfth-grade students, in reporting the similarity between pairs of pictures of common objects, on three dimensions: the ease of seeing similarity (latency), the idiosyncrasy of the report of similarity (uniqueness), and the basis for similarity (frequency of each type of response). This change in performance is contingent primarily upon the change of OR controlled by the careful pairing of objects from an organizational hierarchy. The field-dependence of the Ss also has an effect on the frequency of occurrence of nominal and other responses.

#### OR:

The significant increase in the latency of responses as the associative strength between the objects decreases implies a greater difficulty in finding an invariant relation between the pictures of two objects not closely related in the hierarchy, than in the case of objects closely related. This reconfirms Mandler's conclusion (1968, p.117) to the same effect. The increased difficulty is caused by a lack of many common attributes, which necessitates a longer and more difficult search for a characteristic that is indeed common.

The data also confirm an increase in the uniqueness of each individual response as the objects in the pictures are located further apart in the hierarchy. The common response appears to be characteristic of pairs of objects classified as highly similar (OR1), and its frequency in such cases might well be rooted in the tendency of cognitively mature Ss to classify items in nominal categories. Support for this comes from the fact that responses to OR1 pairs were not only less unique, but also most frequently nominal. Further support comes from Lippman's study (1970), where responses to a similar task appeared to be positively related to age, suggesting that nominal classification may be an outcome of cultural and academic pressures which encourage us to adopt a categorical way of thinking. In the case of less similar pairs (OR2 and

OR3) however, the increased difficulty of finding common ground between the two pictured objects compels the Ss to fall back on more idiosyncratic perceptions and experiences, and gives rise to more unique reports of similarity.

The Scheffé test revealed that this change from common to idiosyncratic responses occurs as soon as the pairs cease to be highly similar and easily grouped together, there being no difference in uniqueness between responses to OR2 and OR3 pairs. Although the rather coarse division of similarity into OR1, OR2 and OR3 does not permit an assessment of exactly where this change takes place, it is safe to assume that it is a direct result of the change from nominal to the other two types of response. This is supported by the fact that the number of nominal responses to OR1 pairs is significantly greater than to OR2 pairs, and confirms the apparent relationship between the frequency of nominal responses and uniqueness.

As similarity decreases, there is a significant decrease in the number of nominal responses, and a significant increase in the number of reports of similarity based on common physical and other types of attribute. This suggests that in a situation where there is great dissimilarity between the pair of objects in the picture, the search for generic categories is broken off, and associations are made at a much less abstract, much more particular level of individual attributes, whether these are present or not in the representation of the objects in question. Rather than make abstract generic associations between highly dissimilar objects, a S will instead draw upon discrete perceived attributes and make physical attribute responses, or he will draw upon his knowledge of the objects beyond the information about them he has before him, and make one of the other types of response.

#### Field-dependence:

Although a S's field-dependence has no effect on the ease of his reporting similarity between two objects, the data show that it does influence the type of response he makes to the pictures. Field-independent Ss made significantly more nominal and other responses. If it seems puzzling that nominal and other responses should both be influenced by field-dependence in the same way, when they are essentially very different types of response, it will be realized that the one thing they do have in common would very likely be related to the field-dependence of the S. Neither nominal nor other responses reflect directly the immediate presence of physical attributes. Nominal responses require the S to go beyond what is physically perceptible and to effect the synthesis of a



more abstract superordinate category. Other responses, likewise, require the S to go beyond what is physically perceptible to seek common characteristics not present in the display -- function, abstract characteristics, location and value -- upon which he will base his report of similarity. Both nominal and other responses, then, indicate a certain degree of independence from the physical characteristics of the stimulus, and the data confirm this relationship. In the light of these findings, it would also seem likely that field-dependent Ss, relying more on the physical attributes directly available in the stimulus picture, would make more physical attribute responses than field-independent Ss. Although not significant, the differences between the means indicate that the proportion of physical attribute responses made by FD and FM Ss is greater than for FI Ss, and this trend would seem to support the notion.

Another phenomenon related to field-dependence is less easy to explain. The Scheffé test showed that in the case of the proportions of nominal and other responses, the means for FI Ss were significantly different from those for FM Ss, but not from those of FD Ss, and in neither case were the means of FM Ss different from those of FD Ss. This suggests that the relationship between field-dependence and response type is more complex than originally thought. Considering only FI and FM Ss, the significant difference between these two is as predicted. In the case of FD Ss, however, there is an apparent reversal of this trend towards responding more as FI Ss. Furthermore, an examination of the data presented in Tables 4 and 6 reveals that the means of the frequency of nominal and other responses to OR1 pairs were in the predicted order. In the case of responses to OR3 pairs, and to OR2 pairs as well for nominal responses, they were not in the predicted order. The source of the problem seems to be located, therefore, in FD Ss nominal responses to OR2 and OR3 pairs, and in their other responses to OR3 pairs, though in the absence of significant interactions this is tentative. The present study cannot explain why FD Ss make more nominal and other responses to dissimilar pairs than FM Ss, while responding as expected to similar pairs. A possible explanation is that some FD Ss find the task of finding similarity between two dissimilar objects so difficult that even they have to look beyond what is perceptually available to find any common characteristic at all. This would not be such a problem to FM Ss, who would be able to detach physical attributes from the stimulus pictures. However, the latency data do not suggest an increase in difficulty as a direct result of increased field-dependence, and thus fail to support this idea. Clearly more research is needed before a satisfactory answer to this question can be found.

### Conclusion:

As the similarity of pictured objects in pairs is decreased systematically, it becomes more difficult for Ss to find common characteristics between them, and the Reports they make of similarity become more idiosyncratic. At the same time, the bases for these reports become less frequently nominal and more frequently associations based on single physical or other attributes. In addition, FI Ss are less likely to rely purely on physically available Characteristics of the pictured objects to make a connection between them, and as a result they will make more nominal associations, and more associations based on characteristics other than the purely physical. To the information we already possess about clustering and association, this study adds the fact that the ease and the bases of reports of similarity change as the similarity is varied, and suggests that field-dependence affects these reports as well. A consideration of change of similarity, and of field-dependence, can undoubtedly contribute to our knowledge of the processes which enable us to organise the environment perceptually, and to learn about it. The findings concerning field-dependence are perhaps the most interesting, for they suggest that the processes in question do not operate solely as a function of the nature of the stimuli presented but are also influenced by a certain innate perceptual ability to re-organise those stimuli to make different kinds of association.

## References

- Binder, A. "A statistical model for the process of visual recognition." Psychological Review, 1955, 62, 119-129.
- Fleming, M.L. "An experimental exploration of three communicator strategies for increasing the predictability of pictorial cue: verbal response relationships." Doctoral dissertation, Indiana University, 1960.
- Gibson, E.J. Principles of perceptual learning and development. New York: Appleton Century Crofts, 1969.
- Jackson, D.N. "A short form of Witkin's embedded-figures test." Journal of Abnormal and Social Psychology, 1956, 53, 254-255.
- Lippman, M.Z. "Correlates of contrast-word associations: developmental trends." Journal of Verbal Learning and Verbal Behavior, 1971, 10, 392-399.
- Mandler, G. "From association to structure." Psychological Review, 1962, 69, 415-427.
- Mandler, G. "Association and organization: facts, fancies and theories." In T.R. Dixon and T.L. Horton (eds.) Verbal behavior and general behavior theory. Englewood Cliffs: Prentice Hall, 1968.
- Mednick, S.A. "The associative basis of the creative process." Psychological Review, 1962, 69, 220-232.
- Miller, G.A. "The magical number seven, plus or minus two: some limits on our capacity for processing information." Psychological Review, 1956, 63, 81-97.

- Olson, D.R. "Language and thought: aspects of a cognitive theory of semantics." Psychological Review, 1970, 77, 257-273.
- Paivio, A. "Paired-associate learning and free recall of nouns as a function of concreteness, specificity, imagery and meaningfulness." Psychological Reports, 1967, 20, 239-245.
- Paivio, A., Foth, D. "Imaginal and verbal mediators and noun concreteness in paired-associate learning: the elusive interaction." Journal of Verbal Learning and Verbal Behavior, 1970, 9, 384-390.
- Paivio, A., Yuille, J.C., Madigan, S. "Concreteness, imagery and meaningfulness values for 925 nouns." Journal of Experimental Psychology, 1968, 76 part 2.
- Paivio, A., Yuille, J.C., Smythe, P.C. "Stimulus and response abstractness, imagery and meaningfulness, and reported mediators in paired-associate learning." Canadian Journal of Psychology, 1966, 20, 362-377.
- Thorndike, E.L., Lorge, I. The teacher's book of 30,000 words. New York: Teacher's College, 1944.
- Witkin, H.A. Personality through perception. New York: Harper, 1954.

---

William Winn is professeur adjoint of education, l'université de Sherbrooke, Sherbrooke, P.Q.